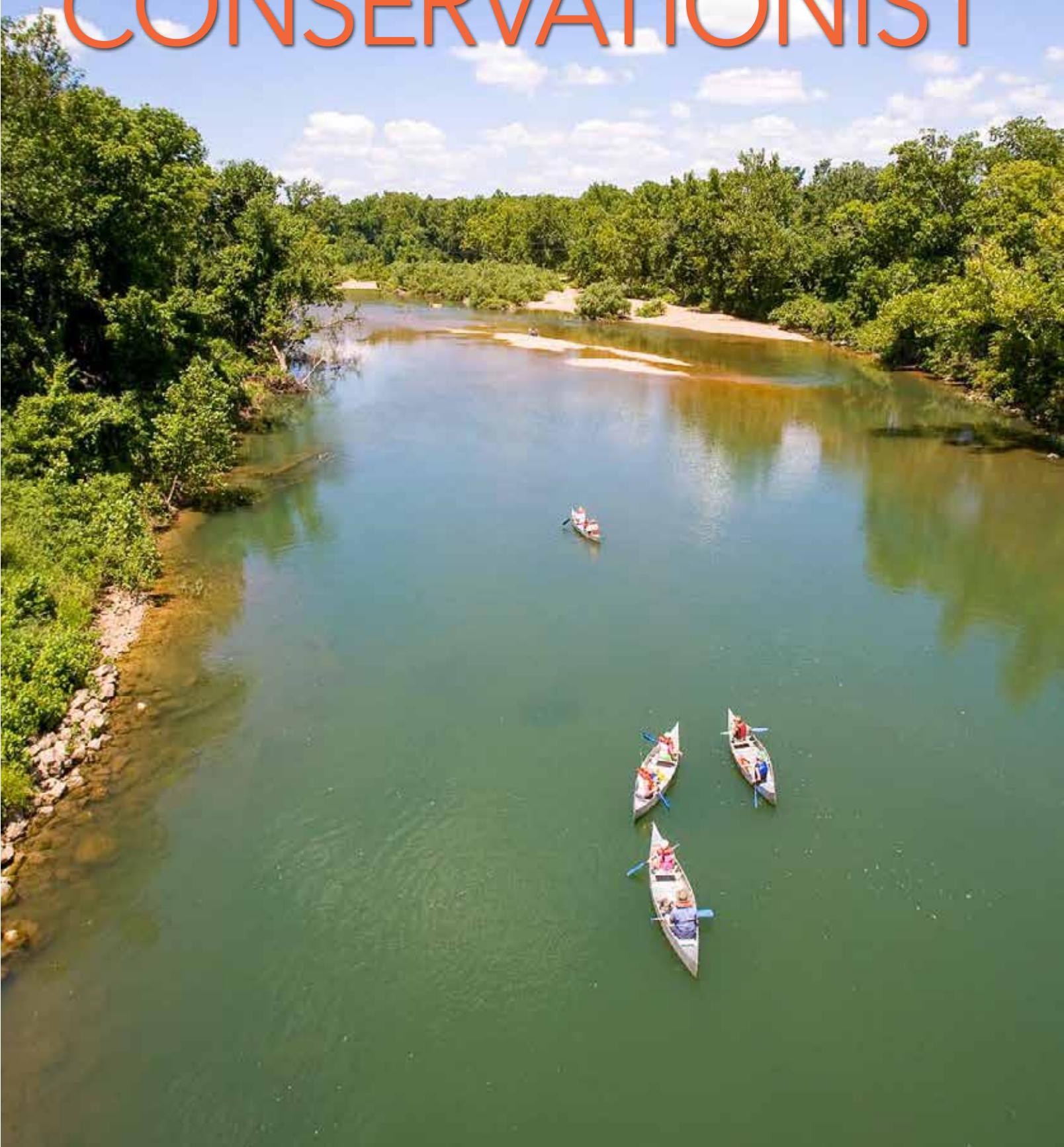


MISSOURI CONSERVATIONIST

VOLUME 80, ISSUE 9, SEPTEMBER 2019
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Wild Jobs

Careers at MDC



SERVING NATURE
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MISSOURI DEPARTMENT OF CONSERVATION

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mdc.mo.gov/about/jobs

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Black-and-yellow
garden spider

MISSOURI
CONSERVATIONIST



ON THE COVER

Canoe trip down the
Meramec River

• **DAVID STONNER**
16-35mm lens, f/11
1/80 sec, ISO 100

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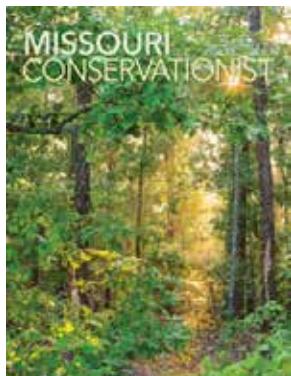
Inbox



Letters to the Editor

Submissions reflect readers' opinions and may be edited for length and clarity. Email Magazine@mdc.mo.gov or write to us:

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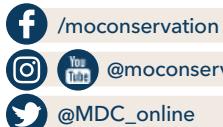


MEMORY LANE

Great cover on your August magazine. I spent my entire work life with the U.S. Forest Service, and it brought back many fond memories. I can't seem to put the issue down.

Jerry Sutherland
Springfield

Connect With Us!



PRAISE FOR OPOSSUMS

I loved the great article in your August edition on opossums, and more importantly, I needed to read it [Awesome Opossums, Page 22]. I always viewed opossums as nuisance pests, which showed my ignorance about them. Not any longer! They are a respectable member of our environment and can visit my spot in the world any time they want to. Thanks for the lesson.

Kevin Ord Farmington

Thank you for your wonderful article on opossums. I wish people weren't so prejudiced against these fascinating creatures just because they aren't cute. And now I will be armed with lots of interesting facts the next time I meet an opossum hater. The photos were perfect! Thanks for taking the space in the magazine. It was well worth it.

Lisa Tessier via email

Didelphis virginiana and its prehensile tail



Thank you for the great article about opossums.

These are some amazing critters, and personally, I think they are pretty cute. I had no idea they were marsupials or that they took care of so many ticks in Missouri. I will be sure to make our backyard opossum-friendly.

Jasmine Barker Springfield

LOYAL READER

We are so lucky to have such an excellent magazine with world class photographers. I'm not very outdoorsy, but I read every month, cover to cover.

Lou Kirby via Facebook

ART OF THE SPIDER

I really enjoyed the picture of the spined micrathena web that was in the July issue of the *Missouri Conservationist* [Ask MDC, Page 6]. The picture brought back a memory. I think it was about 1998, when my dad (age 95) and I were down at our cabin in Lakeview Heights I was finishing up in the kitchen. Daddy had gone down to get the boat ready for us to go out and fish. I walked out the back door and there before my eyes was the most beautiful spider web I had ever seen. I was dazzled by its beauty. It was about 7:30, the sun was reflecting through the web, and the dew reflected a rainbow of color. It was dazzling, to say the least. I had never, and still haven't, seen such a beautiful web. I shall never forget that beautiful artistry.

Donna Wieligman via email



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Have a Question for a Commissioner?

Send a note using our online contact form at mdc.mo.gov/commissioners.



Want to see your photos in the Missouri Conservationist?

Share your photos on Flickr at flickr.com/groups/mdcreaderphotos-2019, email Readerphoto@mdc.mo.gov, or include the hashtag #mdcdiscovernature on your Instagram photos.

**1**

1 | Red fox by **Kathy Duncan**, via Flickr

2 | Sensitive brier by **hagerkathleen**, via Instagram

3 | Spiny softshell turtle by **Vaugh Halter**, via email

**2****3****4**

4 | Hickory Canyon Natural Area by **kicksomedustup**, via Instagram

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Up Front

with Sara Parker Pauley

✖ I remember well the first time I took my little tow-headed niece tromping through the woods, stomping in every mud puddle we could find. She was going to spend the night, so I told her not to worry about muddy clothes, we'd have time to launder them before we took her home. Off she went, full of glee ... stomp, splash, repeat.

Then time passed, as it always does. And she grew into a beautiful young adult, but one who had more interest in indoor adventures. Off she went to college in New York City. I thought I had lost her forever. But as she would return home for summer breaks, it was the outdoors she craved, asking if we could explore the Ozarks and float its streams.

In this issue, we share how MDC offers a variety of opportunities to engage in the outdoors — from those trying to connect for the first time to regular participants wanting to further their skills. Read more about *Hands-on Conservation* on Page 22.

On her most recent visit home, my niece asked if we could go fishing. I felt like the parent of the prodigal son as I prepared for our fishing adventure the next morning, beaming with joy at the request to go afield. Our morning was magical, a pond full of bass and bluegill ripe for the catching. And as she pulled in one after the other, I saw that same smile, that of the tow-headed girl ready to find the next mud puddle, to jump in with both feet ... stomp, splash, repeat once more.

SARA PARKER PAULEY, DIRECTOR

SARA.PAULEY@MDC.MO.GOV

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Printed with soy ink



Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

HUMAN DIMENSIONS

Deer Hunter and Landowner Surveys

Did Missouri's hunters see more or fewer deer when they were afield compared to last hunting season? Are landowners happy with deer numbers in their area, or do they feel the need for change? To answer questions like these, MDC's Deer Program has been mailing surveys to Missourians since 1973.

The surveys include questions about perceived changes in the deer population, such as number of big bucks and total deer, as well as opinions about deer population size and trends.

"Deer biologists want to manage for a healthy and sustainable deer population," said MDC Animal Resource Scientist Kevyn Wiskirchen. "We work to keep the population within social carrying capacity."

This means keeping deer numbers within the range of what local people desire and will tolerate.

"Damage to crops or gardens and risk of vehicle collisions with deer create the need to keep populations in check," Wiskirchen said. When social issues



Most Missouri deer hunters believe there are about the right number of deer where they hunt.

Periodic mailing helps MDC track deer population trends and set harvest limits

such as these arise, his team considers "management actions that allow hunters to bring deer levels lower. When numbers dip below desired levels, we may need to restrict harvest and allow populations to increase."

Data on specific days hunted and number of deer killed are important, both for a "trips-per-harvest" estimate and to better understand when hunters are spending time afield. "Trips-per-harvest measures the average amount of effort required for a successful hunt and tends to decrease as populations increase. This measure often influences hunter satisfaction and is also an important indicator of deer population trends," Wiskirchen said.

Deer Hunter and Landowner Surveys at a Glance

Survey Range

County-by-county across Missouri's 114 counties

85,000

Number of firearms and archery deer hunter surveys mailed per cycle

9,000

Number of USDA agricultural land and deer surveys mailed per cycle



All-Time High

Archers harvested a state record

51,991
deer last season

Selected 2017 Survey Results

- Compound bow hunters had a similar success rate and wounding rate compared to crossbow hunters
- Archers who used a crossbow increased 5% from 2016 to 2017
- 81% of firearms hunters hunt exclusively on private land
- Most firearms and archery hunters believe there are about the right number of deer

In Brief

News and updates from MDC



MISSOURI INCREASES POACHING PENALTIES

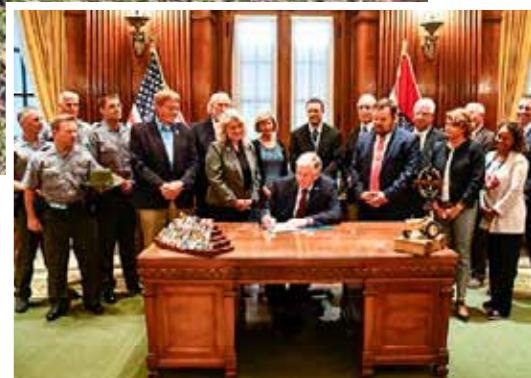
MDC, MISSOURI
LEGISLATURE,
GOVERNOR
PARSON WORK
TOGETHER
TO ADVANCE
LEGISLATION

➔ Governor Mike Parson signed HB260 into law July 11. Called the Poaching Bill, it significantly raises fines for those convicted of illegally taking Missouri game species and other native wildlife. HB260 was sponsored by Rep. Jered Taylor of Republic and Sen. Mike Bernskoetter of Jefferson City.

New fine amounts include \$10,000-\$15,000 for each elk or black bear killed illegally, \$1,000-\$5,000 for each white-tailed buck, \$500-\$1,000 for each wild turkey, and \$500-\$1,000 for each paddlefish. The fines are determined by a judge, and fines collected go to the state's education funds. The new fines went into effect Aug. 28.

If you have information on poaching, call Operation Game Thief at 1-800-392-1111.

Earlier this year, MDC increased the penalty points given to individuals convicted of violating the *Wildlife Code of Missouri* for illegal activities, including poaching. Depending on the violation, MDC assigns a point value, ranging from zero to 16. Learn more about the point system for wildlife violations at short.mdc.mo.gov/Zg5.



Gov. Parson signs HB260 (Poaching Bill) into law, which raises fines for those convicted of illegally taking Missouri game species and other native wildlife, such as this bull elk and a cow elk that were illegally killed in February in Shannon County.

WATERFOWL RESERVATION CHANGES

Changes to the reservation system for managed waterfowl hunts begin this hunting season.

Starting this season, 50 percent of daily hunting spots at managed areas will be offered through online reservations. Of those online reservations, half will be for preseason applications and half will be allocated during a weekly in-season application period. The remaining 50 percent of spots will be held for hunters who participate in the daily morning draw, called the "poor line."

The preseason reservation period will run Sept. 1-18 with results posted Oct. 1. The in-season weekly drawings will take place on Monday afternoons with a seven-day application period that opens the Tuesday before and closes the Monday of the draw at 3 p.m. Successful hunters will be notified via email or text message after the draw with their hunt date, location, and pillar assignment. "Pills" designate the order hunting parties select their hunting locations on the area. The lower the number, the sooner hunting parties get to select their hunting location.

All applicants for waterfowl reservations must have their required permits to apply, and their Federal Duck Stamp to hunt.

Hunters with disabilities will now need to apply to use ADA hunting blinds through the online reservation system during the same timeframe as the preseason application period.

The changes are based on feedback from waterfowl hunters and other research.

For more information on waterfowl reservations, visit mdc.mo.gov and search Waterfowl Reservations, or get a copy of the *Migratory Bird and Waterfowl Hunting Digest 2019-2020*, available where permits are sold.

FREE CWD TESTING STATEWIDE

Deer hunters can have their harvested deer sampled for chronic wasting disease (CWD) at select MDC offices, through participating taxidermists, and meat processors for free during the entire deer hunting season — Sept. 15, 2019-Jan. 15, 2020. For more information, visit Voluntary Sampling at mdc.mo.gov/cwd.

MDC asks hunters to field dress and Telecheck deer before taking them for sampling. Hunters can bring the entire deer for sampling, or just the head with about 6 inches of neck in place. Deer heads that have the cape removed for taxidermy also can be sampled.

Sampling results will be available online at mdc.mo.gov/CWDTestResults.

MDC has found 116 cases of CWD in Missouri since 2012. To learn more, visit mdc.mo.gov/cwd.

Ask MDC

Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov or call 573-522-4115, ext. 3848.

Q: I had a very curious encounter with a snapping turtle. The turtle came up to me, cautious at first and still under water. He followed me for 30 minutes. He retreated, but eventually drew close again, within 4 feet. I've read turtles can see a color of red that humans cannot perceive. I was wearing purple pants and a pink shirt. Is it possible this turtle was fascinated by the color of my clothing?

► Because turtles' eyes contain rods and cones, scientists believe some turtles can see a range of color.

Exactly why this turtle was attracted to you we don't know. It may involve past exposure to humans or the color of your clothing. It's possible this turtle was acclimated to people as someone's pet, and therefore was unafraid. As to being attracted to you, it's possible you either resemble someone who fed the turtle for a time or it was fed by someone who frequently wore clothes in the red spectrum.

It's also possible this turtle learned to associate humans with easy prey. This occurs in places where anglers frequently confine their catch on a stringer or clean their fish near the water's edge and throw the refuse in the water.



Carpenter bee

Q: Recently, I watched a carpenter bee visit my nasturtiums. Traveling from bloom to bloom, the bee landed on the colorful petals, but didn't crawl inside the flowers. What was it doing?

► You observed the carpenter bee's nectar-robbing behavior. Flowers often have specialized shapes and colors, depending on its pollinators. Your nasturtium blossoms have long, narrow spurs that house nectar just beyond the area where pollination occurs. This floral anatomy typically attracts pollinators with long mouthparts, such as butterflies or hummingbirds.

Since carpenter bees have shorter tongues, they chew a hole in the base of the nectar spur to "rob" the sweet liquid. This breaks the plant-pollinator "agreement" because the carpenter bee is benefitting from the flower's nectar without providing pollination services in return.



A leucistic ruby-throated hummingbird

Q: Can you tell me more about this hummingbird's unusual coloration? Could it be an albino?

→ This ruby-throated hummingbird is probably not a true albino, but it may be leucistic.

Leucism is a condition in which there is partial loss of pigmentation in an animal resulting in white, pale, or patchy coloration of the skin, hair, feathers, scales, or cuticle, but not the eyes. Unlike albinism, it is caused by a reduction in multiple types of

pigment, not just melanin. Typically, leucistic animals are partly white, with brown, tan, and gray coloring.

One way to tell the difference between a leucistic animal and an albino is that albinos have white or pink eyes. The dark specks in this bird's plumage and its dark eyes are signs of leucism, since albinism is the complete lack of pigment everywhere.

Although leucism is not a common condition, we do see it from time to time in nature.

What IS it?

Can you guess this month's natural wonder?

The answer is on Page 9.



Caleb Pryor

LIVINGSTON COUNTY
CONSERVATION AGENT

offers this month's

AGENT ADVICE

Dove season opens Sept. 1, and many hunters will head to public areas to bag a few birds. These areas can get crowded, so be aware of your surroundings. Always allow plenty of space between you and your fellow hunters. Pay attention to signs posted on areas you're hunting. Wear eye protection — either sunglasses or safety glasses. For new regulations on toxic versus nontoxic shot, check Page 8 of the *Migratory Bird and Waterfowl Hunting Digest* 2019–2020, available where permits are sold or online at short.mdc.mo.gov/ZpP. Due to recent flooding, some MDC areas were not planted with sunflowers or other crops. Find maps of MDC dove areas at short.mdc.mo.gov/ZgL.

WE ARE CONSERVATION

Spotlight on
people and partners
by Madi Nolte

Larry Strack

→ Strack, a retired system engineer for the Federal Aviation Administration, has a lifelong interest in conservation, first sparked by 4-H forestry projects. Today, Strack feeds his interest by improving his 120-acre property in St. Clair County. He has a Forest Stewardship plan written for the area, which is also registered with the American Tree Farm System. Strack also owns grassland property in Pettis County, which he manages with prescribed burns and invasive species removal.

A go-getter

Strack has done much of the work himself. "Larry takes pride in his land and the fact that owning land comes with responsibility," said MDC Forester Scott Hollabaugh, who began working with Strack in 2016.

In his own words

"I would say my interest was like a fire. It starts with a tiny spark and continues to grow with the accumulation of experiences and knowledge," Strack said.

by David Stonner



What's **your** conservation superpower?



MIGRATORY BIRD, WATERFOWL HUNTING DIGEST AVAILABLE

MDC's *Migratory Bird and Waterfowl Hunting Digest* for the 2019-2020 hunting season is available where permits are sold and online at short.mdc.mo.gov/ZpP. The free guide has detailed information on permits and duck-stamp requirements, hunting seasons and limits, hunting areas, regulations, and more.

New points of interest for the upcoming season include:

- Nontoxic shot is required for hunting doves on 20 conservation areas that have intensive dove hunting.
- Sixteen conservation areas have been added to the existing list of areas where nontoxic shot is required for all hunting with a shotgun.
- Only one pintail is allowed in the daily bag limit this season.
- Duck season will close in the South Zone on Jan. 31.
- Changes have been made to the waterfowl reservation system and the morning draw at managed waterfowl-hunting areas.
- Due to spring flooding, some conservation areas may have sections closed for repair and/or have reduced habitat for dove and waterfowl hunting.

NEW FALL DEER AND TURKEY BOOKLET AVAILABLE

Missouri deer and turkey hunters can get current information on fall hunting from the *2019 Fall Deer and Turkey Hunting & Regulations Information* booklet, available where permits are sold and online at short.mdc.mo.gov/ZgS. The booklet has detailed information on fall deer and turkey hunting seasons, limits, permits, managed hunts, regulations, conservation areas to hunt, post-harvest instructions, and more.

Changes for 2019 include:

- Counties added to and removed from the Chronic Wasting Disease (CWD) Management Zone.
- Hunters who harvest a deer in the CWD Management Zone opening weekend must take their deer on the day of harvest to a designated sampling station.
- An antler point restriction has been reinstated in Benton, Boone, Calaway, Carroll, Cole, Cooper, Grundy, Livingston, Miller, Moniteau, Morgan, Osage, Randolph, Schuyler, Scotland, and Shelby counties.
- Adults no longer need a permit to assist properly licensed youth hunters during the youth portions of firearms deer season.
- Lessees are no longer eligible for no-cost resident landowner permits.
- Hunters may fill two firearms antlerless permits in Audrain, Christian, Clark, Dallas, Lewis, Marion, Monroe, Pike, and Ralls counties.
- Qualifying landowners in Andrew, Atchison, Holt, and Nodaway counties may receive only one no-cost firearms antlerless permit.
- Qualifying landowners in Christian, Lawrence, Pulaski, Ripley, Shannon, and Webster counties may receive two no-cost firearms antlerless permits.
- Barton, Christian, Dent, Douglas, Jasper, Lawrence, Maries, Newton, Oregon, Phelps, Pulaski, Ripley, Shannon, Texas, Webster, and Wright counties are open during the antlerless portion of firearms deer season.

WHAT IS IT? GIANT STAG BEETLE

The male stag beetle's most prominent feature — its pincers — is actually its jaw. This antlerlike feature is used for fighting over females, similar to male elk and deer. The female's pincers are much less imposing, but still well-developed. The giant stag beetle measures from less than $\frac{1}{2}$ inch to nearly $2\frac{1}{2}$ inches and is usually black, brownish, or reddish brown. They can be found along the forest floor or sandy stream banks near driftwood.



Faith, Family, and Fowl

HOW ONE FAMILY UNPLUGS AND
RECONNECTS THROUGH WATERFOWLING

story and photographs by David Stonner





The Malmstrom family heads into the marsh for an afternoon duck hunt as thousands of birds migrate overhead.

Chip Malmstrom ranks the most important things in his life as faith, family, and waterfowling, in that order. Bass fishing comes in a very close fourth. Once teal season opens in early September, birds become the focus and passion of the remainder of the year. It's a chance to unplug from devices, spend time as a family, sit quietly in nature, and simply be.

"It's great for families because everyone can go along at the same time," Chip said. "The kids can be loud and fidgety, and they only have to quiet down and get serious when the birds fly in and start working."

"I like that you can talk and eat while hunting ducks; it's relaxed," said Max, his youngest son.

Chip knows hunters who don't bring their kids to the marshes and wetlands because it can be a lot of work, but he wants his kids to learn how to do it. He can show them when to make the right call.

"I also can take new people and they don't have to have a lot of specialized gear and camouflage if we are hunting from a blind — just a shotgun and a few decoys," he said. "With deer hunting, there can be a lot of sitting and waiting, noise and scent discipline, and you might not see anything, which could lead to kids losing interest. With waterfowl hunting, you typically get at least a few chances to harvest a bird even on a bad day."

The family's Carroll County property is enrolled in the Wetland Reserve Program and has been in partnership with MDC, Natural Resources Conservation Service, and Ducks Unlimited at various times to ensure good habitat for waterfowl, deer, and other wildlife.

"I manage the marshes for the birds and actively manage the woodlands for deer," he said. "I love giving kids an opportunity to get in there to harvest their first deer. I have food plots and box blinds at natural choke points; I want to give them a chance to have some success so they don't lose interest in hunting."

In the past, he would try to get out in the morning to hunt ducks, then hit the deer woods in the evening, but his attention has turned to spending the afternoons out on the marsh as well. He has found there is less pressure on the birds, and it gives multiple opportunities each day to keep kids and newcomers interested.

Chip also has been keeping data on his hunts for the past several years. The 2018 seasons brought 46 different hunts, 34 of which included youth hunters. They averaged 11.18 birds per hunt, 142 total teal and 110 honkers. Harvest numbers have been going up steadily each year as good management practices start to yield better results.

The total harvest for 2018 for the property was exactly 500 birds — the most ever — with four banded geese and the first banded duck.

"I like seeing where they were from and when they migrated," he says. "Three of the geese were from Minnesota, and a pair were banded on opposite sides of the state on the same day, joined up for the flight south, and were both harvested over the same marsh on the same day several months later."

He uses a paper calendar to track weather patterns, who was hunting each day, and what species and numbers of birds were harvested. As he flips through calendars from past years, his eyes light up as he remembers days afield and the fun that was had with friends and family. He has also learned from his data that he's not going to bother hunting on mornings after a full moon because the birds stay up all night feeding and aren't responsive to calling by the time daylight comes around.

"We adjust every year," he said. "We see what works and what doesn't, what modifications to the blind proved effective, how water levels changed our numbers, stuff like that."

Not every hunter has access to a private wetland, and Chip pointed out that the family has also had good luck hunting on farm ponds using cut cedar branches as a blind. When the wetlands freeze up, they will walk a creek to find pockets of open water for the chance to jump hunt ducks.

"You can find success if you are where the birds want to be," he said.

While they have a lot of successful days in the field, when the birds just aren't cooperating, Chip and the boys are just as happy to take a walk in the woods, search for antler sheds, and let the dogs run.

"We just love being in the outdoors," he said. "A bad duck hunt might turn into a hike or a squirrel hunt."

Julie Malmstrom, who grew up duck hunting with her dad and older brother, said she enjoys watching the sunrise and how quiet and peaceful it is as the day sinks in. She has particularly liked watching the boys' progression over the years, from having to do everything for them out on the duck water to watching them make the decisions on setting the decoy spread, giving advice to younger kids, and working the calls. Julie enjoys observing the "chaotic organization" — thousands of ducks and geese on the move — and will invite other moms out to hike or sit in the marsh blind to see a side of nature they may not have ever been exposed to. Waterfowl hunting is an affair best enjoyed by sharing with as many family and friends as possible. ▲

*You
can find
success
if you
are where
the birds
want
to be.*

—Chip Malmstrom



Chip Malmstrom and his eldest son, Matthew, set out decoys by moonlight while Julie cooks breakfast in the blind for the whole crew. It was a bitter December morning and the boys cycled between warming up in front of the space heater and standing watch, shotgun in hand, for workable birds. Chip also worked with the boys on their calling, and let them try to entice a few birds to land.





Chip and his youngest son, Max, venture out to collect a downed bird.



Zephyr, a yellow Labrador retriever, peeks out of his blind to scope out the action. Chip lets the boys take turns practicing calling to birds as they are high overhead. "If you can make a bird do that, dip its tail, I tell the boys to keep doing whatever noise they just did until they come in near the water because that is an interested bird," said Chip.



Middle son, Michael, enjoys going on the hunts but is just as happy eating breakfast and spending time with family as he is getting in on the action.



Chip keeps his collection of waterfowl bands on his call lanyard as a remembrance of fun field days with family and friends. He enjoys sharing the stories behind each one and marvels at the distances the birds travel each year on their migrations.

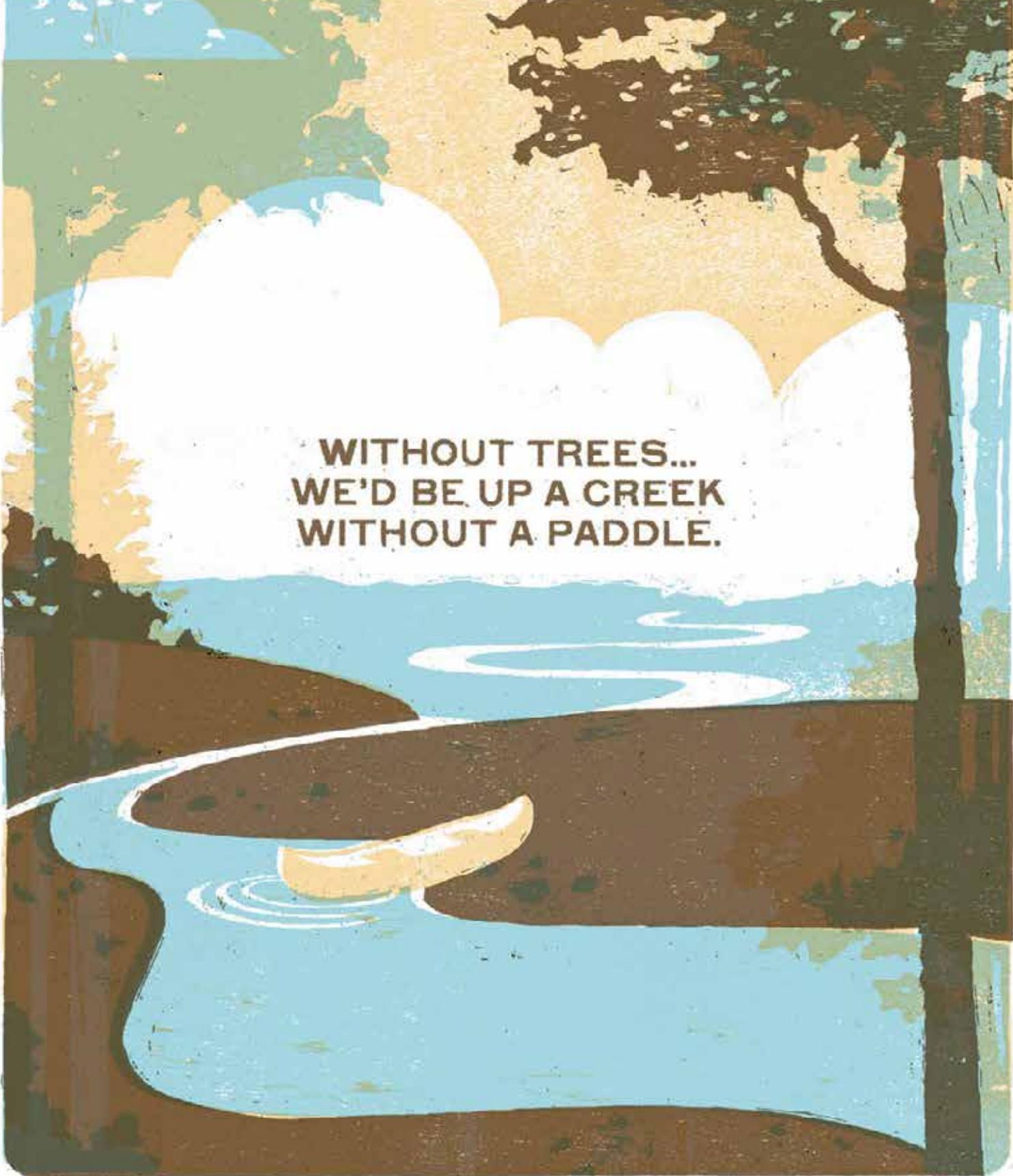


Matthew and Julie work together to haul in the decoys. Julie, who grew up hunting with her family, said the boys get better each year at knowing how to set up their decoys and when to take good shots or pass on a bird. They learn from their mom and dad, but also through teaching friends and new hunters.



It's not just about bagging birds; time with family and friends is the biggest motivator that gets the Malmstrom family outdoors, connecting with each other and the seasons and cycles of nature.

David Stonner has worked as a photographer with MDC for 12 years. He enjoys the excellent whitetail hunting and trout fishing Missouri has to offer, as well as introducing his family to camping and paddling trips in the Missouri Ozarks.



**WITHOUT TREES...
WE'D BE UP A CREEK
WITHOUT A PADDLE.**



find out how trees protect our water — www.TREESWORK.org





This tulip poplar grove started out as bare root seedlings from the state forest nursery.



The Tradition of TREES



MDC'S NURSERY CUSTOMERS HAVE
BEEN PURCHASING SEEDLINGS FOR DECADES

by Holly Dentner  photographs by Noppadol Paothong

If planting hundreds of tree seedlings sounds like an impossible task, imagine thousands of Missourians doing that every year. Many have been at it for decades, passing the tradition down from one generation to the next. Some plant trees because they're trying to reestablish wooded areas on their property, or to improve wildlife habitat. Some are working to reduce erosion control. When asked, most say the same thing — they just like trees.

Those trees start out at the George O. White State Forest Nursery, which has been operated by MDC since 1947. The nursery is located just north of Licking in Texas County. While its original purpose was to provide shortleaf pine seedlings for the state's national forests, its mission has changed over time. Now most seedlings are sold to Missouri's private landowners.

"We have 754 acres of property where we grow about 70 different species of trees and shrubs, and almost all of them are native to Missouri," said Mike Fiaoni, nursery supervisor. "The variety and scope of our efforts is unusual for state nurseries, and you won't find many that produce as many species as we do."

Each year the nursery processes more than 10,000 orders and ships almost 3 million seedlings. To grow all these trees, the nursery

collects or buys tens of thousands of pounds of seeds each summer and fall. For example, about 2,000 bushels (50,000 pounds) of walnuts, 6,000 pounds of white oak acorns, 12,000 pounds of shellbark hickory nuts, and 16,000 pounds of bur oak acorns are needed just to establish seedlings for these four species.

"Missouri's private landowners are responsible for most of the state's forests and woodlands," said Fiaoni. "The nursery is here to support their efforts to keep their woodlands healthy and growing for decades into the future."

Planting seedlings is a low-cost way to improve the landscape, whether you have acres of property or just want to enhance the yard around your home. Depending on the quantity of seedlings purchased, the prices range from 22 to 60 cents for pine seedlings and 36 to 90 cents for hardwoods and shrubs. It's a bargain that many landowners take advantage of year after year.

"I became nursery supervisor in 2017, and one thing I realized right away is that people love these tree seedlings, and they come back year after year for them," said Fiaoni. "I believe it's because the staff here take pride in their work and deliver quality seedlings to Missourians every year."

Secret to Tree Success

Lawrence Buchheit has been buying seedlings from the nursery for over 30 years. His connection with the Missouri Department of Conservation isn't just limited to the nursery. He was an MDC employee for decades, taking care of conservation areas in the southeast part of the state.

His love for trees started when he was young. Growing up in a rural area, he spent a lot of time outdoors. His father taught him the value of trees.

"He told me a tree isn't just a tree," said Buchheit. "Every tree has its place. Every tree has a purpose."

After retiring from MDC in 2001, Buchheit and his wife, Shirley, started their own reforestation business, planting trees for other landowners. They had an eight-person crew and planted thousands of trees across southeast Missouri. He attributes his success in that venture, in part, to the nursery in Licking.

"I would order all the seedlings on behalf of the landowners I was working with," said Buchheit. "Year after year, the people working at the nursery were always helpful and organized."

Buchheit said there's no way he could have planted all those trees without the nursery. There was no other place to get the variety and quantity he needed. He still orders seedlings each year to plant on his property.

Regardless of whether he's working on his 93 acres of woodlands or when he was working on other's properties, his objective is the same. He



Shirley and Lawrence Buchheit have planted thousands of trees throughout southeast Missouri.

plants trees because trees are necessary for the environment — for clean air, clean water, and for soil conservation.

Buchheit has no plans to stop, and now he gets the whole family involved. He encourages anyone who wants to get started planting trees on their property to plant a variety of species, including shrubs. He also has some tips for keeping the seedlings alive.

"Make sure you've got the soil tightly packed around the tree roots, or the voles and mice will come for them," he said. "If you can, dip the seedling roots in a solution that helps preserve moisture, and try to manage the weeds."

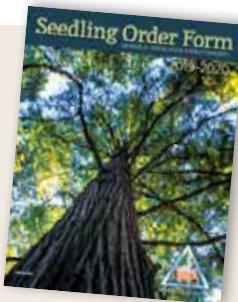


Even after decades of technological advances, tending to seedlings still takes a lot of hands-on work. Nursery workers handle and ship almost 3 million seedlings every year.

Start Your Own Tree-dition

Seedlings can be ordered each year, starting Sept. 1. Check out the seedling order form included in this issue, or order online at mdc.mo.gov/seedlings. Order early for the best selection because certain species sell out quickly. Seedlings ship in the spring.

A few tips to remember when you order: Think about what trees and shrubs would best meet your needs. Consider the size of tree you want to plant, your site's soil condition and sun exposure, and the proximity to buildings, overhead wires, and other obstructions. Plant the right tree in the right place.



"Centennial Celebration Bundle" Celebrates 100 Years of State Forestry

This year marks the 100th anniversary of state forestry agencies in the United States, and the George O. White State Forest Nursery is helping the National Association of State Foresters celebrate by offering a special centennial bundle.

The bundle will include 100 seedlings total and will be available in 2019 only. It includes 10 each of 10 different species that represent the various reasons for planting trees and shrubs and the benefits they provide. The species include deciduous holly and wild plum for wildlife habitat, false indigo and buttonbush for pollinators, witch-hazel and ninebark for erosion control, eastern redbud and bald cypress for urban beautification and shade, and white oak and black walnut for forest products.



Working with Shortleaf Pine

Mark Nikolaisen's experience with seedlings might seem a little contrary to what one would expect to read in a story about planting trees. Nikolaisen has been working on his property in Phelps County near Maramec Spring for almost 17 years. He has invested plenty of hard work to improve the mostly wooded acreage and has planted over 1,300 seedlings.

"My goal for the property has been to provide food and shelter for a variety of wildlife, and I also wanted to establish a few shortleaf pines since my acreage is on the northern part of their natural range in Missouri," he said. "The nursery seedlings are an affordable way to do that, but you have to put in the effort to get your plan moving forward."

Unfortunately, nature can be tough on his trees. Hot and dry summers, insects, and especially the deer have claimed many a seedling. Tree protection tubes, bamboo stakes, and, as the seedlings get a bit bigger, 4-inch plastic drain pipes have helped more trees survive.

While the shortleaf pine survival rate hasn't been what he would have liked, other tree species are doing well, including persimmon and black walnut trees in the woodland valleys. For Nikolaisen, the seedlings are one part of his effort to manage his property.

Nikolaisen's reason for planting trees is one piece of his overall plan to keep improving his property. He wants a diverse natural area that provides good habitat for all sorts of wildlife. He's built brush piles for rabbits and he's seen bobcats and foxes. Deer are plentiful and his interest in hunting them has changed a bit over the years.



Mark Nikolaisen's goal was to establish shortleaf pines on his property, but he has also enjoyed seeing how the changing habitat attracted more wildlife.

"If I see a mature deer and I get a clean shot, I'll take it, but as I get older, I just enjoy seeing wildlife using the land," he said. "Planting seedlings and taking care of the property is the reward itself." ▲

Holly Dentner is the Forestry Division's outreach and communications supervisor.



MDC staff offer many opportunities for all ages to explore and discover nature "hands-on."



Hands-on Conservation

MDC OUTDOOR EXPERTS OPEN NATURE TO NOVICES

by Brian Flowers ▪ photographs by Robert Hemmelgarn

Whether you're looking for that distinctive tug at the end of your fishing line, the exhilarating feeling of your kayak gliding over still water as the morning fog slowly burns off, or the rush of adrenaline you get as that old gobbler comes into view, there's a unique group of MDC employees and programs ready to help you connect with nature and get the most from your next adventure.

In 1978, the Missouri Conservation Commission recognized the need to reach more citizens with an expanded education program of "hands-on" nature education. That year an education section combined outdoor skills and conservation education efforts, including hunting and fishing skills, archery, hiking, backpacking, camping, canoeing, and historic skills. These changes were part of a much larger nationwide effort to emphasize "lifetime-skills" education, especially in physical education curriculums. The new unit in Missouri held teacher workshops and worked with schools to incorporate in-school outdoor skills curriculums. New education modules were written to help teachers, scouts, and youth leaders facilitate these skills.

Today, MDC staff are assigned to every region of our state and continue to follow in their predecessor's footsteps. By sharing a unique brand of outdoor knowledge through hundreds of organized educational programs, staff break new ground and reach thousands of Missourians each year.



Preserving a Rich Hunting Heritage

Organized firearms safety came to Missouri in 1957 when the first MDC employees were trained as instructors by the National Rifle Association. In the first 10 years of the program from 1958–1967, 300,000 students were trained. In the 1970s, additional hunting-specific information was added to the program, making it truly "hunter education." In response to a growing number of hunting-related incidents in the 1980s, the Missouri Conservation Commission approved mandatory hunter education certification, beginning in 1988, for all persons born on or after Jan. 1, 1967. Since its inception, 1.3 million hunters total have passed the certification program.

"The Missouri Department of Conservation is dedicated to preserving Missouri's rich hunting heritage," said Justin McGuire, MDC hunter education and shooting range coordinator. "The hunter education program is a valuable tool through which new hunters are exposed to the concepts of safe, ethical hunting. These new hunters will carry the heritage into the future, and it is imperative that they do so with the fundamentals provided in the hunter education course."

In 2018, instructors certified 24,407 new hunters in 649 classes. Today's hunter education program consists of both a knowledge portion and a skills component. Participants have the option to complete the knowledge portion either online or with a take-home manual. Those age 11–15 must attend a skills session and show hands-on proficiency with demonstration firearms. For those age 16 and over, the entire program may be completed online.

The future of hunting is firmly rooted in passing on the skills, ethics, passion, and traditions of the hunt. For a new

Missourians can choose from many different programs that teach firearm safety skills. From traditional hunter education courses to mentored shooting and hunting classes, participants can attend classes designed to recruit, retain, and reactivate hunters.



Visit mdc.mo.gov/events-s3 to find a calendar of all MDC educational and outdoor skills events.



hunter, having plenty of opportunity for success is important, and few game species offer as much opportunity in Missouri as squirrels. With a long season and liberal bag limit, new hunters can find plenty of fun chasing Missouri bushy tails.

Jefferson City resident Kevin Smith attended a squirrel hunting event with his wife and son. "I really enjoyed the squirrel hunt," Smith said. "I had never hunted for squirrels and really appreciated the experience and knowledge of our MDC mentor. The event was well organized, and my family and I plan to attend mentored hunts hosted by MDC in the future."

These events teach hunting techniques, safety, regulations, and game preparation. MDC pairs participants with more advanced hunters for a mentored experience. These events are designed to recruit, retain, and reactivate hunters.

An Intimate View of Nature

In recent years, kayaking has grown in popularity. A kayak allows the paddler a very intimate view of nature as you glide silently across the water to view wildlife or reach your next fishing hole. If you're new to the sport, an MDC basic kayak program is the place to start. These classes range from basic paddling skills to full kayak fishing excursions, all geared toward the novice paddler.

"Our basic programs teach participants safety and paddling techniques to help them comfortably and confidently enjoy Missouri's ponds, lakes, streams, and rivers," said Emily Porter, conservation educator and kayak instructor. "Kayaking is a fantastic way to go fishing, bird-watching, photograph wildlife, and relax from a different perspective."

Imagine paddling silently down a remote stretch of river as you search for that next lunker smallmouth bass. You're able to reach new fishing holes and explore Missouri's waterways with ease from a kayak. Or, if wildlife watching is your next adventure, try it from inside a kayak and you won't be disappointed.

Whether you're a novice or advanced paddler, MDC can teach you how to get the most from your next paddle sports adventure. Join us to learn the basics while you paddle in one of our flat water courses and then put your skills to the test in a more advanced river class. Paddling sports are among the fastest growing outdoor activities and offer some of the best ways to explore the outdoors.



MDC gives families the chance to learn and recreate together in the outdoors. From outdoor skills workshops to mentored hunting and fishing opportunities, everyone can get involved in learning the basics of conservation with MDC programs.

MoNASP: Keeping Students on Target

In 2007, MDC adopted the National Archery in the Schools Program (NASP), which became known in Missouri as MoNASP. The program teaches target archery to youth in grades 4 through 12 and is designed to be taught as a part of the regular school curriculum. MoNASP focuses on the fundamentals of archery from stance to release. All students learn the "11 steps to archery success" developed by recognized national archery coaches. Eric Edwards, MoNASP state coordinator, firmly believes in the lessons taught in the program and has seen students succeed first-hand.

"MoNASP students take the skills from this program and carry those traits into the classroom and even into their adult life," Edwards said.

The processes and analysis it takes to be a successful archer are the same skills and abilities needed to succeed in the classroom and at life. This is an example of why NASP gets kids On Target for Life. For those communities wishing to start an archery program in their schools, MDC offers equipment grants to do just that.

Many schools form archery teams and go on to compete at the state and national level. In 2018, Blair Oaks High School sophomore archer Kamryn Twehus dominated the NASP World Tournament by taking first place in the High School Girls Division and being the Overall Individual Champion of the tournament. Twehus shot a score of 299 out of a possible 300.

"Missouri was once again well represented on the podium at the World NASP tournaments," Edwards said. "MoNASP has been able to provide an opportunity for thousands of kids to participate in archery."



Creating Confidence

MDC outdoor skills workshops offer outdoor novices basic skills in a fun and friendly, no-pressure environment. Led by professional instructors and trained volunteers from conservation partner organizations, these one- to two-day workshops cover a variety of outdoor skills, including camping, hiking, paddle sports, fishing, and shooting sports.

Outdoor Skills Specialist Rob Garver, who leads a popular Discover Nature—Women summer workshop at Mark Twain Lake, enjoys seeing participants find success in the outdoors for the first time.

"Catching that first fish or hitting a clay target is exciting for our participants," Garver said. "It gives them the confidence that they can try these activities on their own."

Workshops also give families the time to learn together in the outdoors. Most people learn about the outdoors from a parent or grandparent who wanted to pass along their love of nature and our wildlife. MDC workshops recognize the need for mentoring in passing on the skills and knowledge to engage the next generation in conservation recreation.

Fly-fishing, Snagging, and Giggling

Whether it's basic bait fishing, fly-fishing, snagging, or gigging, MDC staff teach it. Fishing can be one of the best ways to get outdoors and spend quality time with friends and family. Missouri — with more than 200 species of fish, thousands of miles of streams and rivers, and some of the best fishing lakes in the nation — has plenty of opportunities. Annually 1.1 million anglers fish Missouri waters.

To get started, check out an MDC Discover Nature — Fishing (DNF) event near you. These programs are free to participants and offer hands-on instruction from basic equipment and regulations to fish habitat and biology. Each lesson is two hours long and there are four lessons in the DNF curriculum.

"Fishing is a sport that anyone of any age can do and enjoy," said Terri Fike, MDC fisheries specialist. "The rush you get when you feel a nibble or see your bobber go under the water is so exciting you won't want to put your fishing pole down. Whether you're a kid catching your first fish or a parent mentoring a child, it doesn't matter. You still get excited about fishing."

Even those who are advanced beyond the basics can try new fishing methods that are challenging and fun. Warsaw area Outdoor Skills Specialist Mark Miller leads a very popular fishing workshop that teaches participants how to snag paddlefish. Paddlefish, or "spoonbill," is an ancient species of fish that has more in common with sharks than other types of fish. Named for its paddle-shaped snout, the paddlefish in Missouri can grow to lengths of 7 feet and weigh as much as 160 pounds. The paddlefish feeds on tiny crustaceans and insects by swimming with its mouth open and collecting them on its closely set gill rakers. Because paddlefish don't bite baited hooks, anglers use large weighted treble hooks to snag the fish.

"When snagging, I often question my own intelligence," Miller said. "After a few hours of pulling the weighted hooks

through the water, my muscles are aching, but then I hook up, I yell, 'fish on,' and we're soon pulling a 60-pound fish into the boat. You can't get much more exciting than that."

If you like to stay busy in the off season, or when the weather keeps you indoors, you can learn about fly-tying and lure making at MDC classes. Fly-tying is the art of attaching natural and artificial materials to a hook to resemble an insect or other prey that fish may be feeding on. MDC education classes teach participants everything from selecting the proper hook size to choosing just the right materials to fool a fish on your next angling adventure. Sam Stewart, naturalist at Runge Conservation Nature Center, is an excellent fly-tier and offers education opportunities on how to "match the hatch" and make you a better angler.

"Tying flies in winter can be a great way to relax, learn new tricks, and stay focused on the important things, like fishing," Stewart said. "When it gets cold outside, I often put down the fly rod and go to the vise to explore new ideas for flies, practice techniques, and fill my fly boxes while I dream about spring."

"When I tie flies, I feel connected to the rhythms of the natural world. Studying what fish eat, mimicking natural insects, designing the pattern, and finally fooling a wary fish. It's the root of my life and my conservation ethic."

MDC staff strive to share their passion for conservation with every participant, in every program. From the child catching her first fish, or the wing shooter trying to improve his technique, MDC outdoor skills programs open new opportunities in conservation recreation to all. ▲

Brian Flowers has worked as an MDC outdoor skills specialist and regional supervisor for the past 18 years. He resides in Columbia with his wife, JoAnne, and enjoys exploring Missouri's outdoor places as often as possible.



Getting the most from your next fishing adventure means being prepared. Classes that teach fishing skills, including fly-tying and lure making, are popular and often offered in the winter months to keep anglers engaged in this life-long skill.



Get Outside in SEPTEMBER →

Ways to connect
with nature



What Does Your Persimmon Say?

Persimmons are good to eat, if they're ripe. Lucky for you, they begin ripening in September. Wind-fallen fruits taste the sweetest, and, according to legend, predict the weather. Some folks claim you can tell how cold the winter will be by splitting open a persimmon seed. If the inside looks like a **knife**, expect frigid winds that will cut like a blade. A **spoon** predicts plenty of snow to shovel. And, if you find a **fork**, plan on a mild winter.

Natural Events to See This Month

Here's what's going on in the natural world.



Woolly worms show up in full force this time of year



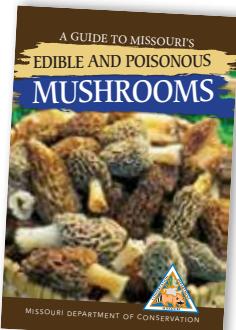
Deer mice store seeds and nuts underground and in nests



American white pelicans gather at wetlands

Fall Mushroom Season

There's more to wild mushrooms than morels. Hit the woods this fall and look for puffballs, black trumpet mushrooms, and other fall delicacies. For help with identification, check out *A Guide to Missouri's Edible and Poisonous Mushrooms* at short.mdc.mo.gov/ZYM.



NORTHWEST REGION

Fly Fishing Basics Clinic

Thursday, Sept. 12 • 6-8 p.m.

Krug Park Lagoon

3500 St. Joseph Ave., St. Joseph, MO 64505

Registration required by Sept. 12.

Call 888-283-0364 or visit short.mdc.mo.gov/ZYB.

All ages

Come learn basic fly fishing skills then practice your newly learned skills. All equipment and bait is provided. Fishing permits are required for individuals between 16 and 64.



JEWELWEED: FLOWER—BOB ROUTLEDGE, SAULT COLLEGE, BUGWOOD.ORG; LEAF—JERRY A. PANNI, USDA AGRICULTURAL RESEARCH SERVICE, BUGWOOD.ORG
POO—JERRY A. PANNI, USDA AGRICULTURAL RESEARCH SERVICE, BUGWOOD.ORG



Touch It — We Dare You

Jewelweed, also known as touch-me-not, produces fruit that contracts, coils, and splits explosively when touched, casting seeds in all directions. There are two varieties in Missouri — one with lemon-yellow flowers and the other with orange flowers with red or reddish-brown spots.

SOUTHWEST REGION

National Hunting and Fishing Day

Saturday, Sept. 28 • 12-4 p.m.

Andy Dalton Shooting Range

4897 N. Farm Road 61, Ash Grove, MO 65604

No registration required. For more information, call 417-742-4361.

All ages

Each year on the fourth Saturday in September, we celebrate National Hunting and Fishing Day by providing one free hour of shooting on the rifle/pistol range, shotgun patterning range, or the archery range. For shotgun shooters, we allow one free round of trap or skeet. Bring your own firearms and ammunition to participate. Regular check in, hours, and fees apply for other hours/rounds needed.

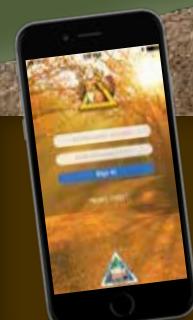
Go Fish Gigging

Gigging season starts Sept. 15 at sunrise. Learn the basics of fish-spearing, like equipment needed, regulations, where to go, and more at short.mdc.mo.gov/Z4P.



ENJOY MORE TIME HUNTING

Go mobile with the **MO Hunting** app. Purchase, view, and store permits. Notch your permit and telecheck your deer and turkey harvest. Access basic statewide regulations, season information, and more.



Download the free app today at
mdc.mo.gov/mohunting



Places to Go

KANSAS CITY REGION

Four Rivers Conservation Area

Wetlands, waterfowl, and one long name change

by Larry Archer

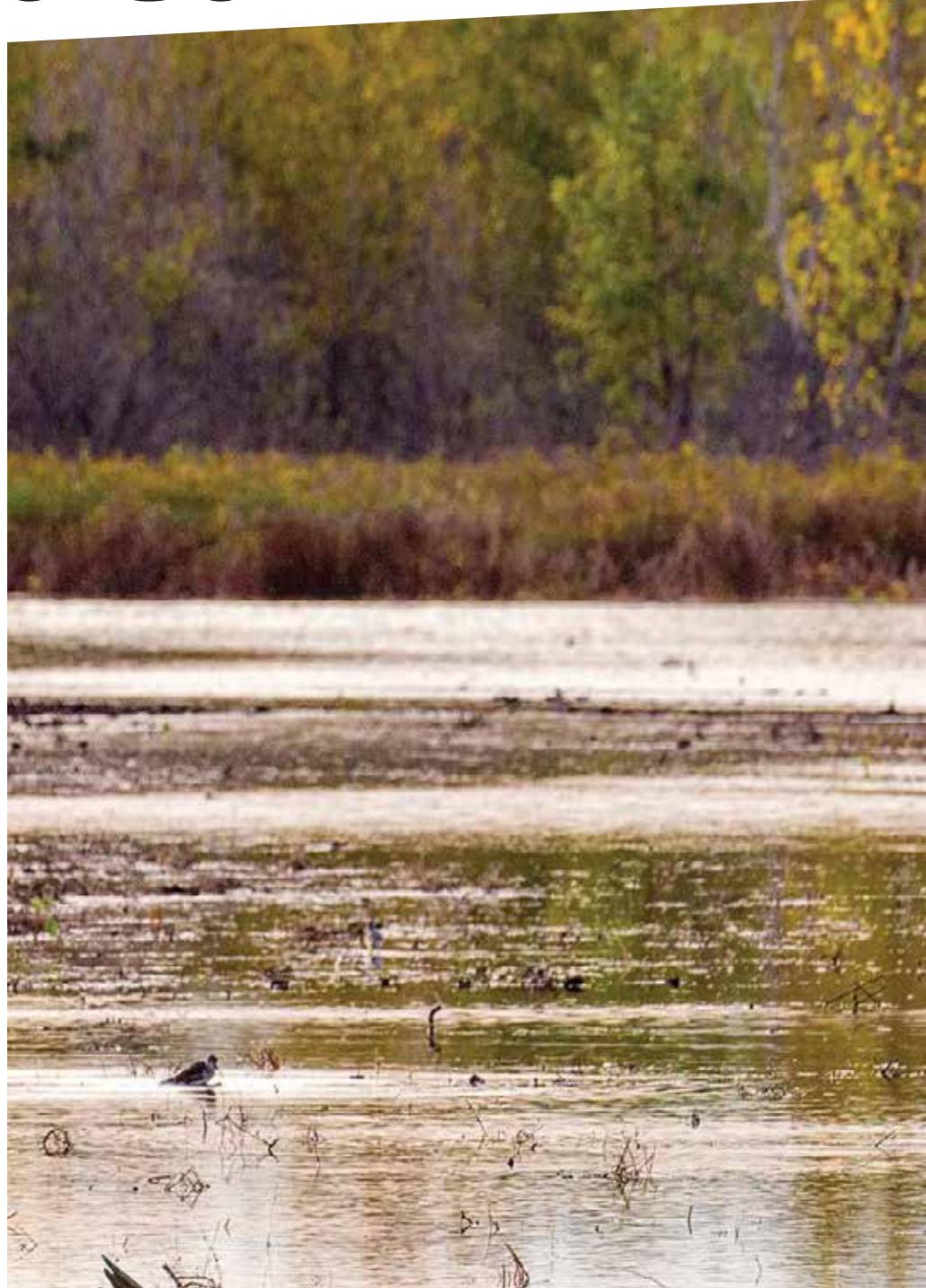
It's complicated. With an expansion, name change, natural area, and roughly 5,500 acres of managed wetlands, there's a lot to take in when it comes to Four Rivers Conservation Area (CA).

First is the name. Originally purchased in 1982, Four Rivers CA was renamed the August A. Busch Jr. Memorial Wetlands at Four Rivers Conservation Area in 1999 after an expansion the previous year. The expansion doubled the number of wetland units, making the 13,929-acre area in Vernon and Bates counties a major Midwest destination for waterfowl hunters, said Wildlife Management Biologist Chris Daniel, Four Rivers CA manager.

"That September through January period is typically when the highest public use occurs," Daniel said. "We'll have 6,000 to 7,000 waterfowl hunters during duck season."

The same thing that makes the area a haven for waterfowl hunters also makes it a destination for birders, he said.

"Four Rivers is one of the top 10 places to bird in Missouri in terms of species diversity. August through September are really good times to view shorebirds," he said. "We typically have some shallow water and exposed mudflats that we manage specifically for shorebirds. When possible, we try to put some of that close to the roads so people can see that."



Blue-winged teal

"Early to mid-September is a big attractant for early teal season hunters. It's not uncommon to have 2,000-plus blue-winged teal here. That's pretty normal at some point during the migration, but it doesn't always correspond with the early teal season."

—Four Rivers CA Manager Chris Daniel



Greater yellowlegs

**WHAT
TO
LOOK
FOR
WHEN
YOU
VISIT**



Southern leopard frog



Beaver



Pectoral sandpiper



Great egret



FOUR RIVERS CONSERVATION AREA

consists of 13,929 acres in Vernon and Bates counties. The area is located about 15 miles north of Nevada and 5 miles south of Rich Hill. To reach headquarters from I-49/U.S. Highway 71, take Route TT east 2 miles to County Road 1600, then south 2 miles.

N38° 1' 14.52" | W94° 19' 55.92"

short.mdc.mo.gov/ZpS 417-395-2341

WHAT TO DO WHEN YOU VISIT



Bird-Watching Included in the National Audubon Society's Osage River Bottoms Important Bird Area (short.mdc.mo.gov/ZfE). Included in the Great Missouri Birding Trail (short.mdc.mo.gov/Zfb). The eBird list of birds recorded at Four Rivers CA is available at short.mdc.mo.gov/Zfa.



Camping Designated camping sites.



Fishing Black bass, catfish, crappie, sunfish, white bass.



Hiking No designated trail system, but there is an extensive network of levees and field roads.



Hunting Deer and turkey

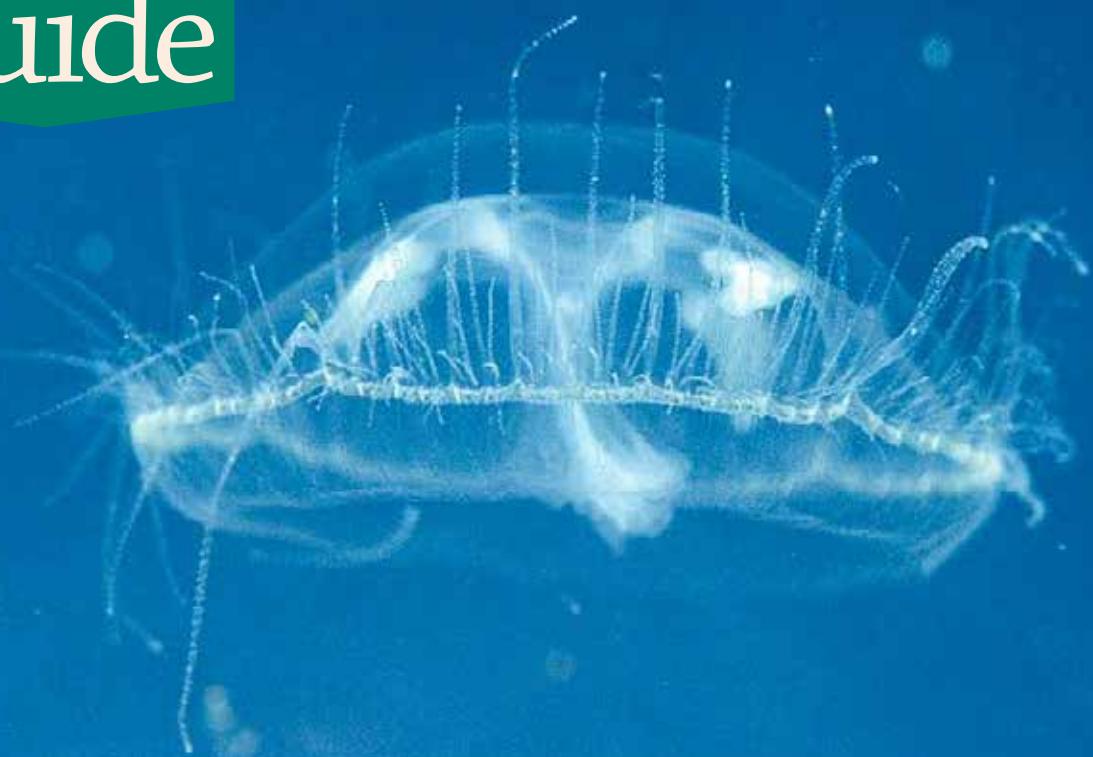
Deer and turkey regulations are subject to annual changes. Please refer to the *Spring Turkey* or *Fall Deer and Turkey* booklets for current regulations.

Also **dove, rabbit, quail, and squirrel**



Waterfowl Hunting Open hunting and morning draw. Waterfowl regulations vary depending on location. Please refer to the *Migratory Bird and Waterfowl Hunting Digest* for current regulations.

Wild Guide



Freshwater Jellyfish

Craspedacusta sowerbyii

Status

Commonly encountered in Missouri but sporadic during medusa stage

Size

½ to 1 inch

Distribution

Statewide



Did You Know?

Freshwater jellies are similar to their saltwater cousins. Their tentacles do have the same stinging cells, used for feeding, but they probably cannot penetrate human skin.

Freshwater jellyfish are typically found in calm or standing water in ponds, lakes, reservoirs, and quiet or sluggish pools. They usually float just below the surface and when they appear are often seen in great numbers. They swim by pulsating contractions of their umbrellalike body. Jellies are transparent or translucent, sometimes tinted tan, gray, white, green, or blue.



LIFE CYCLE

Freshwater jellyfish have two phases — polyp and medusa. During the polyp phase, the jellyfish reproduces asexually by “budding.” A bud forms on the side of the polyp, grows, and breaks away as a new polyp. However, it can break away as a medusa. In this phase, it can create sperm and eggs and can reproduce sexually.



FOODS

Freshwater jellyfish prey on any tiny animals, but zooplankton are a favorite. The medusae wave their tentacles slowly in the water, using special stinging cells to subdue its prey. The tentacles draw the food into the jellyfish's mouth.



ECOSYSTEM CONNECTIONS

Tiny plants and animals form the base of the food chain. Freshwater jellies are an important link between the tiny animals they eat and their own predators, including crayfish.

Outdoor Calendar

MISSOURI DEPARTMENT OF CONSERVATION

FISHING

Black Bass

Impounded waters and non-Ozark streams:
Open all year

Most streams south of the Missouri River:
May 25, 2019–Feb. 29, 2020

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2019

Nongame Fish Gigging

Impounded Waters, sunrise to sunset:
Feb. 1–Sept. 14, 2019

Streams and Impounded Waters,
sunrise to midnight:
Sept. 15, 2019–Jan. 31, 2020

Paddlefish

On the Mississippi River:
Sept. 15–Dec. 15, 2019

Trout Parks

Catch-and-Keep:
March 1–Oct. 31, 2019

Catch-and-Release:
Nov. 8, 2019–Feb. 10, 2020

→ Dove season opens Sept. 1, followed closely by deer and turkey archery seasons on Sept. 15. Get the latest on limits, methods, and other regulations with the *Migratory Bird and Waterfowl Hunting Digest 2019–2020* and the *2019 Fall Deer and Turkey* booklet. Both publications are available at MDC regional offices and online at short.mdc.mo.gov/ZZf.



Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.

HUNTING



Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2019

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crow

Nov. 1, 2019–March 3, 2020

Deer

Archery:
Sept. 15–Nov. 15, 2019
Nov. 27, 2019–Jan. 15, 2020

Firearms:

- ▶ Early Youth Portion (ages 6–15):
Nov. 2–3, 2019
- ▶ November Portion:
Nov. 16–26, 2019
- ▶ Late Youth Portion (ages 6–15):
Nov. 29–Dec. 1, 2019
- ▶ Antlerless Portion (open areas only):
Dec. 6–8, 2019
- ▶ Alternative Methods Portion:
Dec. 28, 2019–Jan. 7, 2020

Dove

Sept. 1–Nov. 29, 2019

Groundhog (woodchuck)

May 6–Dec. 15, 2019

Pheasant

Youth (ages 6–15):
Oct. 26–27, 2019

Regular:

Nov. 1, 2019–Jan. 15, 2020

Quail

Youth (ages 6–15):
Oct. 26–27, 2019

Regular:

Nov. 1, 2019–Jan. 15, 2020

Rabbit

Oct. 1, 2019–Feb. 15, 2020

Sora, Virginia Rails

Sept. 1–Nov. 9, 2019

Squirrel

May 25, 2019–Feb. 15, 2020

Teal

Sept. 7–22, 2019

Turkey

Archery:
Sept. 15–Nov. 15, 2019
Nov. 27, 2019–Jan. 15, 2020

Firearms:

- ▶ Fall: Oct. 1–31, 2019

Waterfowl

See the Waterfowl Hunting Digest or visit short.mdc.mo.gov/ZZx for more information.

Wilson's (Common) Snipe

Sept. 1–Dec. 16, 2019

Woodcock

Oct. 15–Nov. 28, 2019

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.



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on Instagram**

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Discovering nature with a friend makes for great memories — and photo opportunities. While this adult syrphid fly knows nothing of friendship or making memories, it may discover a place to feed on nectar or pollen from this new vantage point, high atop a crayfish.

 by **Noppadol Paothong**

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